

University of Iowa
Heartland Center for Safety and Health
Annual Program Highlights
Reporting Period: July 1, 2012 – June 30, 2013
Principle Investigator: Patrick . O'Shaughnessy

Center Highlights

Agricultural Safety and Health
Program Director: Dr. Diane Rohlman

With the retirement of longtime Director Dr. Kelley Donham, the Agricultural Safety and Health Training Program will be led by Dr. Diane Rohlman, Associate Professor in the Department of Occupational and Environmental Health. An agricultural researcher with international impact, Dr. Rohlman has focused her work on the neurobehavioral deficits of farmworkers exposed to workplace hazards and the interventions needed to help them minimize or prevent those exposures. She and the other ASH Training Program faculty, Drs. Fred Gerr, Matthew Nonnenmann, and Renee Anthony, have now begun to revise the program's curriculum to incorporate her added expertise, while retaining the multi-disciplinary philosophy of and approach to ASH training. One redesigned course, offered by Dr. Nonnenmann with support from other faculty, will be available to trainees seeking advanced ASH training. Trainees will learn to utilize tools such as the Census of Agriculture and injury surveillance databases to characterize hazards to agricultural workers, generate specific research hypotheses and propose potential approaches to mitigate or eliminate hazards to agricultural workers. The course will focus on hazards that agricultural workers experience regionally, nationally and globally.

Industrial Hygiene
Program Director: Dr. Thomas Peters

In 2011 when NIOSH recommended a substantially lower exposure limit for nanoscale titanium dioxide (100 nm or smaller) than for larger particles, Industrial Hygiene Program Director Dr. Tom Peters saw the need for a new personal sampling method. He knew that removing larger respirable particles and capturing only nanoparticles would allow him to streamline exposure assessments and use more cost-efficient techniques to estimate the nanoparticles in the respiratory system. So Dr. Peters and his research team, which included Heartland Center trainee Lorenzo Cena (PhD 2011) and IH faculty member Dr. Renee Anthony, developed the nanoparticle respiratory deposition sampler. This lightweight, portable device placed with a worker's breathing zone selectively collects particles smaller than 300nm with an efficiency that matches their deposition in the respiratory system, and analysis of a sample costs \$30 compared to \$300 for traditional techniques used with existing samplers.

In 2013 Dr. Peters filed a patent for the technology and entered negotiations with a Florida company to license the commercial rights to the NRD sampler. He has begun field testing the new sampler, measuring a broad range of metal nanoparticles in nanotechnology industries and in places with more traditional exposures, such as welding fume in vehicle maintenance or manufacturing.

Industrial Hygiene graduate Lindsay Parker (MS 2007) has achieved a "first" with her employer, BP-America Production. After four years as an industrial hygienist with the large, multi-national oil and gas company, working with field personnel in more than 20 BP sites, Lindsay was hired by the Regional President of BP-

North American Gas (the “region” being the US lower 48 states) to be his Executive Assistant. She is the first industrial hygienist ever to hold this sought-after job, which is designed, with its macro-level perspective, as a manager-in-training position. Besides managing the President’s calendar and business communications, Lindsay plans, coordinates, and develops material for field visits, town halls, and other meetings, including with federal & state representatives, BP Board members, and Executive VPs. The position has most often been filled by engineers or financial employees, but Lindsay likes that she can bring her IH perspective to the senior level of management. She thinks it may have helped her get the job when she explained “that I’d worked in every BP asset and got to know the people, the jobs they did, and the major hazards and risks of the business.”

**Occupational Health Nursing
Program Director: Dr. Kerri Rupe**

Pam Carter, RN, COHN-S, FAAOHN, a current trainee in the Occupational Health Nursing program (MSN, anticipated December 2013), has risen to a top leadership role in her field. Her peers elected her President of the American Association of Occupational Health Nurses (AAOHN), a position she began in May 2013. She has represented OHNs at NIOSH, working directly with Director John Howard on key occupational health and safety issues affecting our nation’s workers, and has traveled across the US speaking on the future of occupational health nursing. In her presidential role, she was named one of “The 50 People Who Most influenced EHS in 2012-13” by the editors of the “EHS Today.” Since 2012, Pam has been the Environmental Health and Safety Manager for the manufacturer Daikin McQuay (Verona, VA, location).

**Occupational Injury Prevention
Program Director: Dr. Marizen Ramirez**

The Occupational Injury Training Program has been strengthened with the addition in 2013 of a new core faculty member. Dr. Carri Casteel is an injury epidemiologist with a primary research focus on workplace violence, particularly the prevention of robbery-related deaths and injuries in small businesses. Along with teaching and mentoring of Heartland Center trainees, Dr. Casteel plans to extend her work as translational research, studying the incentives, delivery messages and other aspects of small business owners’ implementing robbery prevention strategies. She is also developing a dissemination model for a small-business robbery-prevention program that is community based.

**Occupational Medicine Residency
Program Director: Dr. Fred Gerr**

The outstanding work of two graduates of the Occupational Medicine Residency Program has been recognized recently. Sudha Pandalai, MD, PhD, co-authored a paper that was nominated for the CDC 2012 Charles C. Shepard Science Award, the preeminent honor recognizing excellence in science at CDC/ATSDR. The paper, “Interaction of occupational and personal risk factors in workforce health and safety” (Am J Pub Health, 2012; Schulte PA, Pandalai SP, Wulsin V, Chun HK) discussed issues related to the interrelationships of occupational risk factors (ORFs) and personal risk factors (PRFs) and their combined impacts on disease, illness, and injury. The study’s review of the scientific literature demonstrated an extensive catalogue of risk factor interactions and examples highlighted specific issues for considering combined ORF-PRF contributions to illness and injury. Dr. Pandalai has been a Medical Officer in the Risk Evaluation Branch of NIOSH since 2009.

Greg Couser, MD, (MPH 2002), was recently named the Mayo Clinic Department of Medicine Laureate Award winner for 2013 in the Division of Preventive, Occupational, & Aerospace Medicine. Greg was nominated by

his colleagues, based on criteria that cover performance, collegiality, and personal integrity, for this award, which recognizes “individuals who have made special contributions to their peers, divisions, the department, institution, and community.” Greg has clinical responsibilities in that division, as well as the Department of Internal Medicine, along with administrative roles in its Case Management Team (Medical Director), in the Mayo Clinic Employee Assistance Program (Medical Director), and in Mayo Management Services, Inc. (Associate Medical Director), a third-party administrator of health plans nationwide.